FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

September 22 to October 5, 2013 (Weeks 39 & 40)

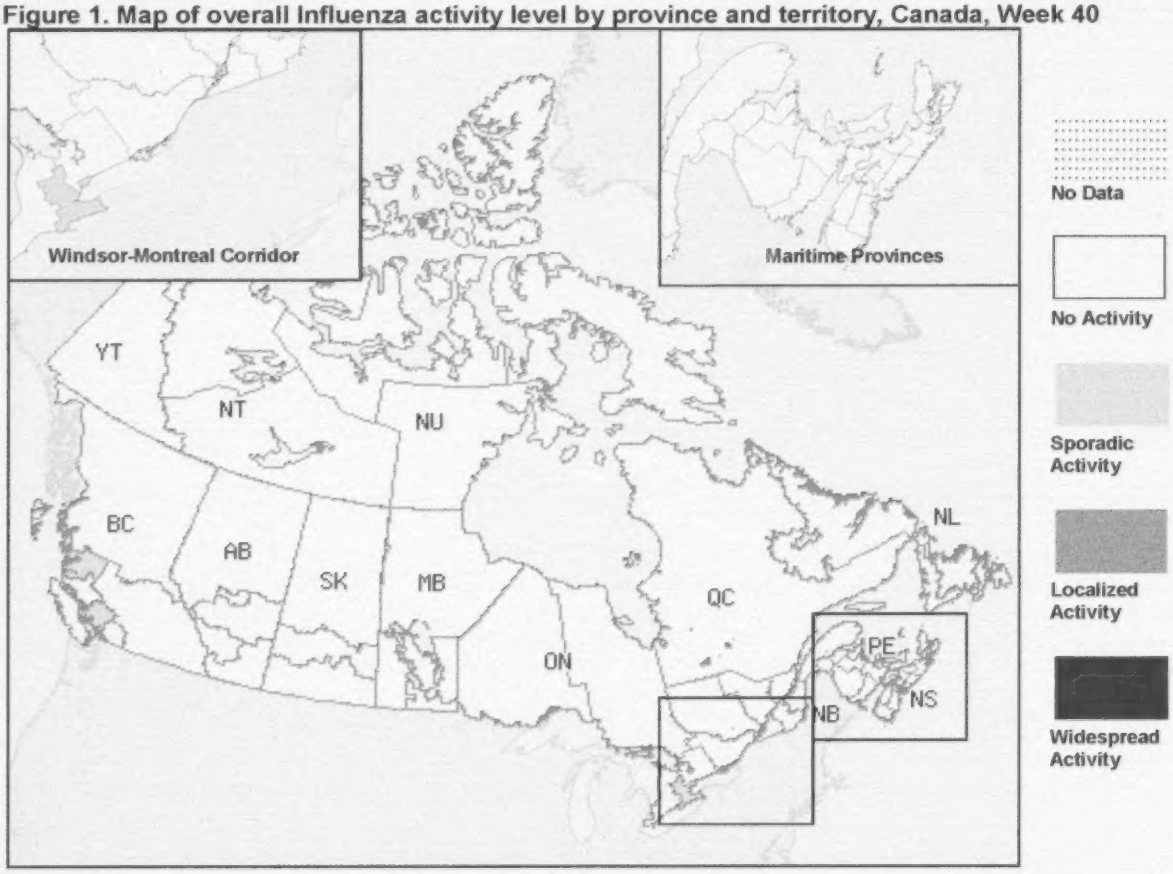
Overall Summary

- Influenza activity in Canada remained at inter-seasonal levels during this 2-week period.
- Few laboratory detections of influenza have been reported to date this season; detections of rhinovirus and parainfluenza increased during this 2-week period.
- The ILI consultation rate increased over the past three weeks.

Influenza Activity (geographic spread) and Outbreaks

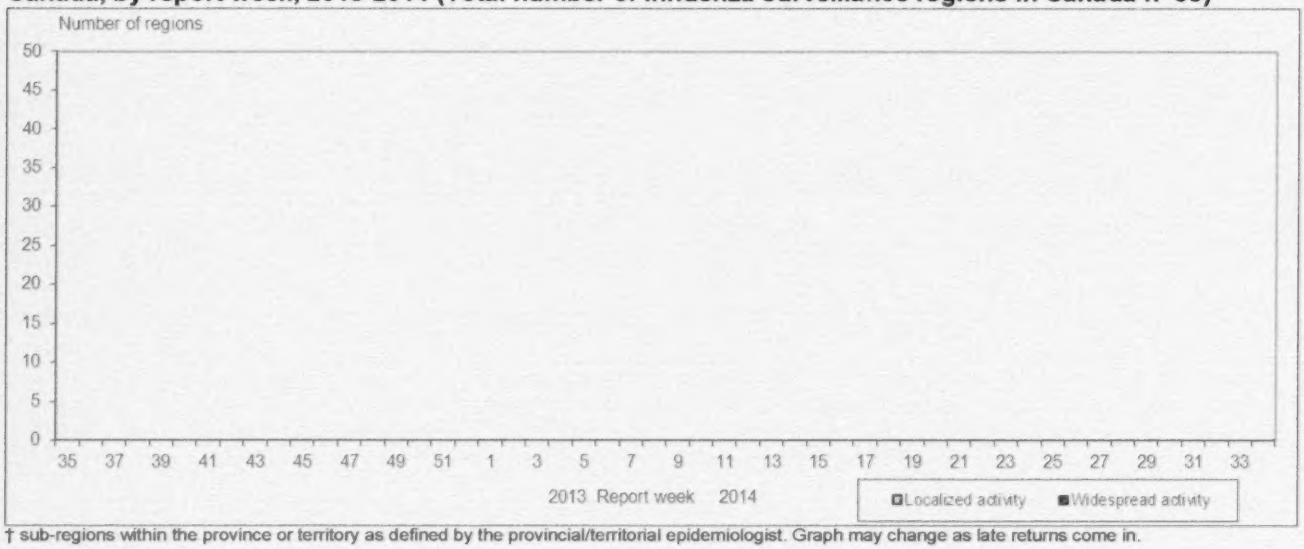
The number of regions reporting influenza activity was at inter-seasonal levels in weeks 39 and 40. During this period, six regions reported sporadic activity (Figure 1). Localized activity has not been reported since week 26 of the 2012-13 season (Figure 2). No new influenza outbreaks were reported in weeks 39 or 40. (Figure 3).

Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 40



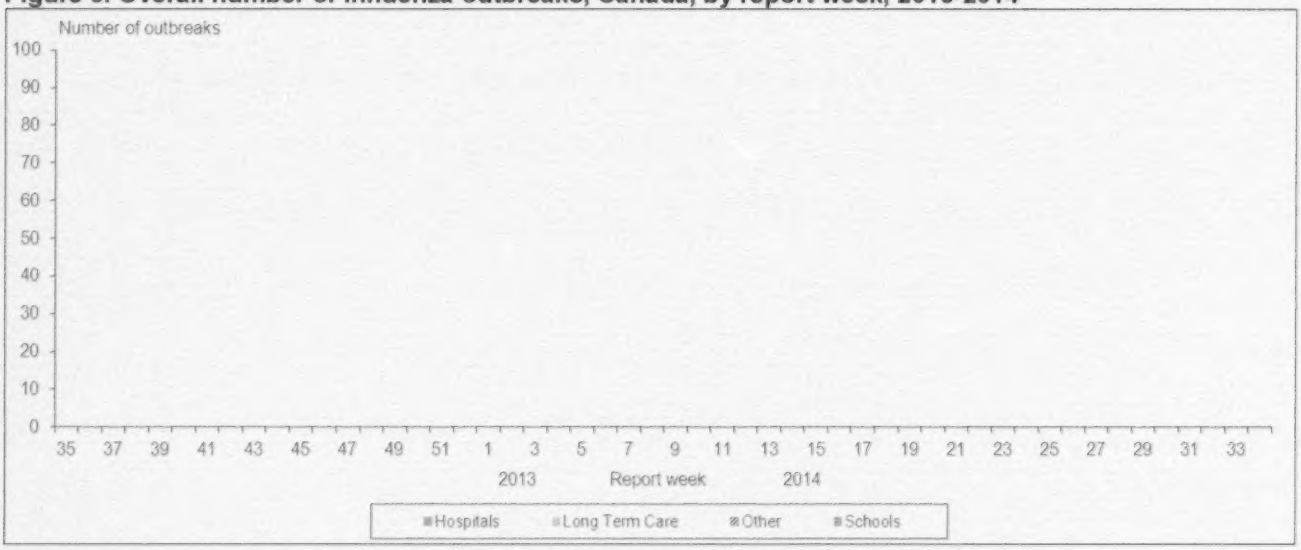
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2013-2014 (Total number of influenza surveillance regions in Canada n=58)



† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2013-2014



Influenza and Other Respiratory Virus Detections

The overall percentage of positive influenza tests was low and stable, at 0.2% in week 39 and 0.3% in week 40. Among the nine influenza viruses detected in weeks 39 and 40, seven were influenza A (Table 1). Cumulative influenza virus detections by type/subtype to date are as follows: 76.9% influenza A [10% A(H3), 45% A(H1N1)pdm09 and 45% A(unsubtyped)] and 23.1% influenza B (Table 1).

Detailed information on age and type/subtype has been received for 22 cases to date this season (Table 2). The proportion of cases by age group is as follows: 18.2% <5 years; 0% between 5-19 years; 18.2% between 20-44 years; 54.5% between 45-64 years; and 9.1% ≥65 years of age.

The percentage of positive tests for rhinovirus increased slightly from 31.3% in week 38 to 31.8% in week 39, then decreased to 28.8% in week 40. The percentage of positive tests for parainfluenza increased from 2.9% in week 38 to 4.1% in week 40. The percentages of positive tests for other respiratory viruses were low in week 40: human metapneumovirus (hMPV) (0.4%), respiratory syncytial virus (RSV) (0.4%), coronavirus (0.4%) and adenovirus (1.2%) (Figure 5)*.

* For more details, see the weekly Respiratory Virus Detections in Canada Report.

Table 1. Weekly and Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2013-2014

Reporting provinces	Weekly (September 22 to October 5, 2013)						Cumulative (August 25 2013 to October 5, 2013)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	0	0	0	0	0	1	0	0	0	0	0	2
AB	1	0	0	1	0	1	6	0	0	6	0	2
SK	0	0	0	0	0	0	2	0	0	0	2	0
MB	0	0	0	0	0	0	0	0	0	0	0	0
ON	2	0	1	1	0	0	5	0	2	2	1	2
QC	3	0	0	0	3	0	6	0	0	0	6	0
NB	1	0	0	1	0	0	1	0	0	1	0	0
NS	0	0	0	0	0	0	0	0	0	0	0	0
PE	0	0	0	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	0	0	0	0	0	0
Canada	**7**	**0**	**1**	**3**	**3**	**2**	**20**	**0**	**2**	**9**	**9**	**6**

*Unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2013-2014*

Age groups	Weekly (September 22 to October 5, 2013)					Cumulative (August 25 2013 to October 5, 2013)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	0	0	0	0	0	4	0	2	2	0
5-19	0	0	0	0	0	0	0	0	0	0
20-44	2	1	0	1	0	3	1	0	2	1
45-64	3	1	0	2	2	9	7	0	2	3
65+	0	0	0	0	0	1	0	0	1	1
Unknown	0	0	0	0	0	0	0	0	0	0
Total	**5**	**2**	**0**	**3**	**2**	**17**	**8**	**2**	**7**	**5**

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Delays in the reporting of data may cause data to change retrospectively.

Figure 4. Influenza tests reported and percentage of tests positive by report week, Canada, 2013-14

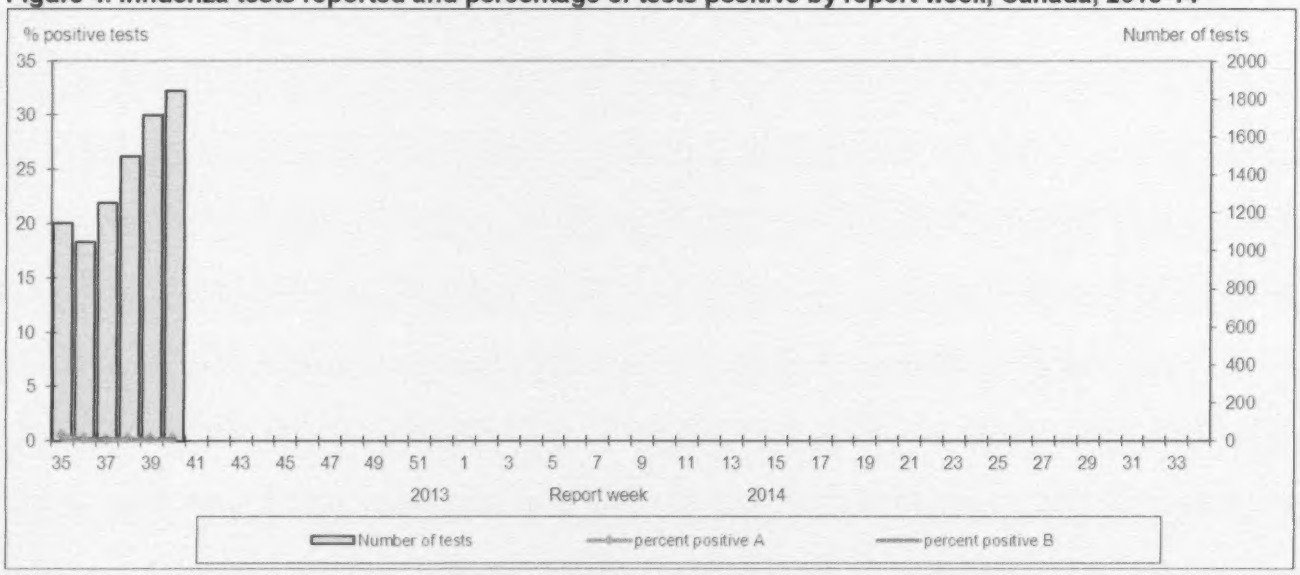
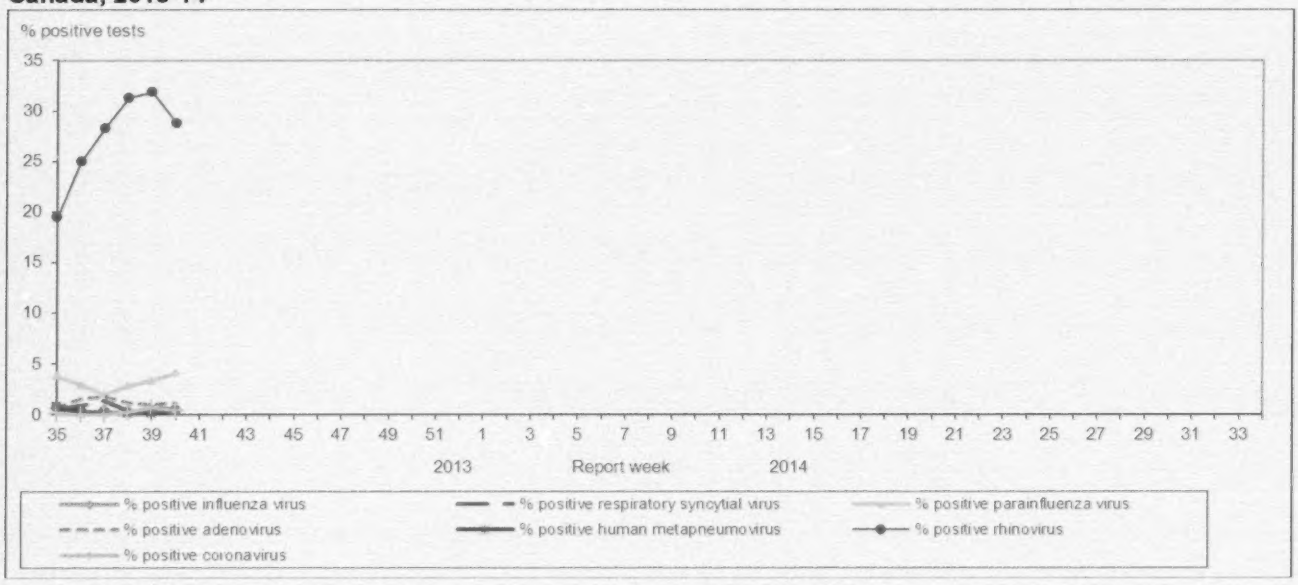


Figure 5. Percent positive influenza tests compared to other respiratory viruses, by reporting week Canada, 2013-14



Influenza Strain Characterizations

The National Microbiology Laboratory (NML) has not yet conducted antigenic characterization of influenza viruses in the 2013-14 season.

Figure 6. Influenza strain characterizations, Canada, 2013-2014, N = 0

Note: The WHO-recommended components for the 2013-2014 northern hemisphere trivalent influenza vaccine include: an A/California/7/2009 (H1N1)pdm09-like virus, an A(H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011b, and a B/Massachusetts/2/2012-like virus.

Antiviral Resistance

The NML has not yet conducted antiviral resistance testing of influenza viruses in the 2013-14 season.

Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2013-2014

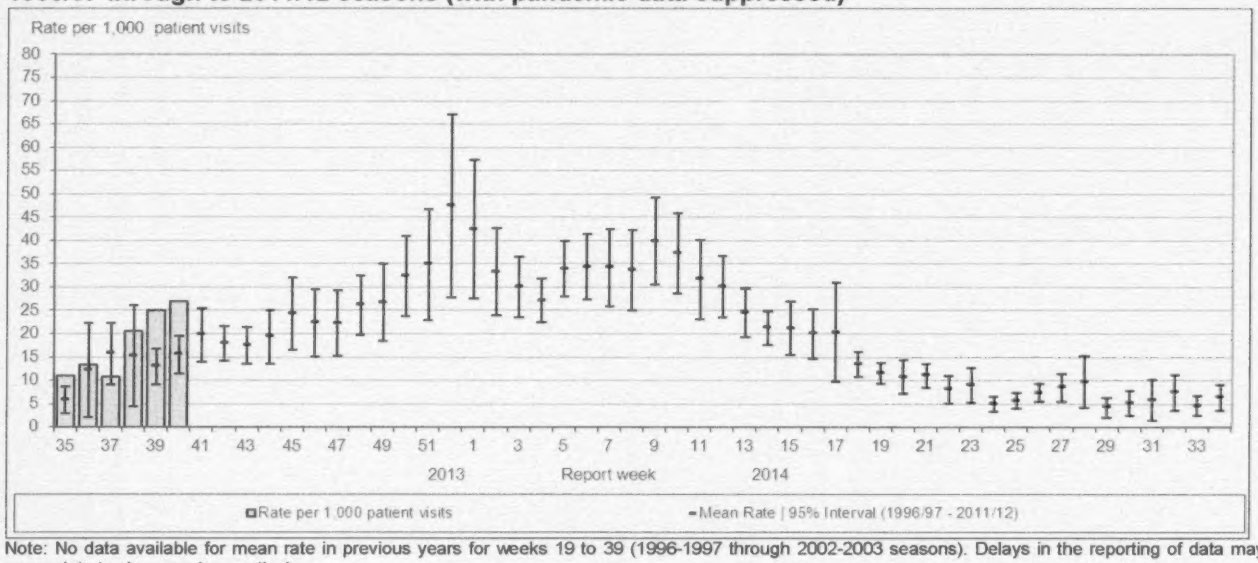
Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	0	0	0	0	0	0
A (H1N1)	0	0	0	0	0	0
B	0	0	0	0	NA*	NA*
TOTAL	0	0	0	0	0	0

* NA – not applicable

Influenza-like Illness Consultation Rate

The national influenza-like-illness (ILI) consultation rate increased from 20.6/1,000 visits in week 38 to 24.9/1,000 in week 39 and 26.9/1,000 in week 40 (Figure 7).

Figure 7. Influenza-like illness (ILI) consultation rates by report week, Canada, 2013-14, compared to 1996/97 through to 2011/12 seasons (with pandemic data suppressed)



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Severe Respiratory Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths (IMPACT)
No laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations have been reported in any of the 12 hospitals participating in the Immunization Monitoring Program Active (IMPACT) network in weeks 39 or 40.

Note: The number of hospitalizations reported through IMPACT represents a subset of all influenza-associated paediatric hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

Adult Influenza Hospitalizations and Deaths (PCIRN)
Active surveillance of laboratory-confirmed influenza-associated adult (≥16 years of age) hospitalizations reported by the PHAC/CIHR Influenza Research Network (PCIRN) Serious Outcomes Surveillance (SOS) network concluded for the 2012-13 influenza season on April 30th, 2013. The PCIRN-SOS network continues to report limited data on laboratory-confirmed cases of influenza identified through passive surveillance, and active surveillance will start again on November 15th, 2013. Two new hospitalizations were reported in weeks 39 and 40, both adults with influenza A, one 45-64 years of age and one ≥65 years of age. No ICU admissions or deaths were reported.

Note: The number of hospitalizations reported through PCIRN represents a subset of all influenza-associated adult hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

Provincial/Territorial Influenza Hospitalizations and Deaths (Aggregate Surveillance System)
In weeks 39 and 40, one new laboratory-confirmed influenza-associated hospitalization was reported from participating provinces and territories*. The case was a child 0-4 years of age with influenza A(H3N2). To date this season, three influenza-associated hospitalizations have been reported. The two previous cases were adults 45-64 years of age with influenza A(H1N1)pdm09. One ICU admission was reported among the three cases and no deaths were reported.

Note*: The number of new influenza-associated hospitalizations and deaths reported by the Aggregate Surveillance System each week may be overestimated, as it may include retrospective updates to data from Ontario for previous weeks. These data may also include cases reported by the IMPACT and PCIRN networks. Influenza-associated hospitalizations are not reported to PHAC by the following Provinces and Territory: BC, NU, QC, NS, and NB. Only hospitalizations that require intensive medical care are reported by Saskatchewan. ICU admissions are not reported in Ontario.

International Influenza Updates

Northern Hemisphere
Influenza activity in temperate regions of the northern hemisphere was at inter-seasonal levels in weeks 37 to 38.
World Health Organization influenza update ***(#195)***
Centers for Disease Control and Prevention seasonal influenza report ***(wk38)***
EuroFlu weekly electronic bulletin ***(wk38)***

Tropical Regions
Asia & Africa: Influenza activity remained low in most countries in tropical Asia, with both influenza A subtypes circulating. Hong Kong, China Special Administrative Region, reported increasing circulation of A(H3N2) in September, with accompanying increases in influenza-associated hospitalization rates. Countries in Southeast Asia reported decreasing circulation of influenza. In the Central African region, Côte d'Ivoire (influenza B), Ghana (A(H3N2)) and Kenya (co-circulation of all three types/subtypes) reported continued influenza activity.

Carribean, Central America & tropical South America: Influenza activity in Caribbean and Central America was at low levels in weeks 37-38. In the majority of countries, co-circulation of influenza A(H3N2) and A(H1N1)pdm09 was reported this season, with the exception of Honduras, where influenza B was circulating. In tropical South America, influenza activity continued to decrease, indicating the end of the 2013 season in this region. Co-circulation of influenza A(H1N1)pdm09 and influenza B was reported this season.

World Health Organization influenza update ***(#195)***
PAHO Influenza Situation Report ***(wk39)***

Southern Hemisphere
The influenza season has come to an end in temperate countries of South America. Activity in Oceania seems to have reached or passed its peak.

South America – Southern Cone: Influenza and ARI activity were within the expected levels for this time of year in most countries. In both Argentina and Chile, RSV continued to be the predominant respiratory virus, although laboratory detections of influenza and RSV have declined from a peak around week 27-28. In Paraguay, ILI activity

was higher than expected for this time of year, with some influenza B continuing to circulate. In Brazil, detections of respiratory viruses have declined from a peak in week 27; some influenza A and B continues to circulate.

South Africa: Circulation of A(H1N1)pdm09 was reported from April to July 2013, with a peak in laboratory detections in week 23. Influenza circulation in weeks 31-39 has shifted to a predominance of A(H3N2) and influenza B, but continues to decline.
South Africa Influenza surveillance report ***(wk34)***

Australia & New Zealand: Compared to recent years, the start of the 2013 influenza season has been delayed in Australia and New Zealand. Both countries have had co-circulation of influenza A(H1N1)pdm09, A(H3N2) and influenza B.
In New Zealand, consultation rates for ILI remained below the baseline level. Laboratory detections of influenza in weeks 38 and 39 were similar to previous weeks. Among the 1779 influenza viruses identified between weeks 1 and 39, 42.7% were influenza B. Among the 684 subtyped influenza A viruses, 74.9% were A(H3N2).
In Australia, as of week 37, the influenza season seems to have peaked with activity relatively low compared to the previous two seasons. The ILI consultation rate and number of calls related to ILI received by the National Health Call Centre Network were similar to or slightly lower than was observed during this period in previous seasons. The number of laboratory-confirmed influenza notifications decreased in weeks 36 and 37. Among the 17,990 influenza viruses identified between 1 January and 13 September 2013, 63% were influenza A. To date approximately 15% of all influenza detections have been A(H1N1)pdm09 in 2013 compared to <1% during the 2012 season. Influenza B is predominant in persons <15 years of age, while influenza A is prevalent in children <5 years of age and adults 30-34 years of age. Consistent with previous seasons, there have been few notifications of A(H1N1)pdm09 in persons >65 years of age. Interim vaccine effectiveness estimates suggested that immunization with the seasonal influenza vaccine reduces the risk of requiring medical treatment or hospitalization for an influenza infection by 40-64%.
New Zealand Public Health Surveillance ***(wk38)***
Australia Influenza Report ***(#07)***

World Health Organization influenza update
PAHO Influenza Situation Report
WHO FluNet

Emerging Respiratory Pathogens

Human Avian Influenza
Influenza A(H7N9): No new cases of human infection with avian influenza A(H7N9) have been reported by the World Health Organization (WHO) since 11 August 2013.
PHAC – Avian influenza A(H7N9)
WHO – Avian Influenza A(H7N9)

Human Swine Influenza
Influenza A(H3N2)v: No new cases of human infection with variant influenza A(H3N2)v were reported in weeks 39 and 40. To date in 2013, a total of 20 A(H3N2)v cases have been reported, and one person has been hospitalized.
Centers for Disease Control and Prevention Influenza A(H3N2) Variant Virus

Middle East Respiratory Syndrome Coronavirus (MERS-CoV)
Since 27 September 2013, WHO has reported six additional cases of MERS-CoV infection in Saudi Arabia. The cases range in age from 14 to 79 years. One patient has mild symptoms while all others have been hospitalized. Three patients are contacts of previously confirmed cases. Of the remaining three patients, two are reported to have had no exposure to animals or a confirmed case, and one has no exposure information. As of 11 October 2013, 136 laboratory-confirmed cases of human infection with MERS-CoV have been reported, including 58 deaths. Most patients are male (62%, 80/130) and range in age from 2 to 94 years (median 53 years, n=131).
PHAC – Middle East respiratory syndrome coronavirus (MERS-CoV)
WHO – Coronavirus infections

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

ILI definition for the 2013-2014 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/Influenza outbreaks for the 2013-2014 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.
Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.
Workplace: Greater than 10% absenteeism on any day which is most likely due to ILI.
Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

Influenza Activity Levels Definition for the 2013-2014 season

Influenza Regional Activity levels are defined as:
1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported
2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†
3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region**†
4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region**†
Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.
* More than just sporadic as determined by the provincial/territorial epidemiologist.
† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.
This report is available on the Public Health Agency website at the following address: http://www.phac-aspc.gc.ca/fluwatch/index.html.

Ce rapport est disponible dans les deux langues officielles.